

**ABSTRACT**

An integrated structure of a network of  $N$  add-compare-select (ACS) units associated with  $N$  states of a trellis of a Viterbi convolutive decoder. The ACS units are physically gathered by pairs juxtaposed to form two spaced apart parallel columns, each pair including two ACS units associated, respectively, with states  $2n$  and  $2n+1$  modulo- $N$  ( $n$  being a positive integer). Each of the two ACS units of the pair is coupled, for receiving two path metrics, to an ACS unit associated with one of states  $n$  and  $n+N/2$  of a close pair and to an ACS unit associated with the other of states  $n$  and  $n+N/2$  of a remote pair. The space between the two columns constitutes a common channel that includes the interconnections between remote pairs of units. The structure is implemented in a technology with at least three metallization layers and wherein the two ACS units of each pair are juxtaposed along the column height.